

# Applying Predictive Analytics in Business

Matthias Mohler, June 2017



swisscom



# Agenda

1. Management Summary

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2. About Swisscom

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3. Our Approach

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4. Our Architecture

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5. Dunning Prevention PoC

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6. Banking PoC

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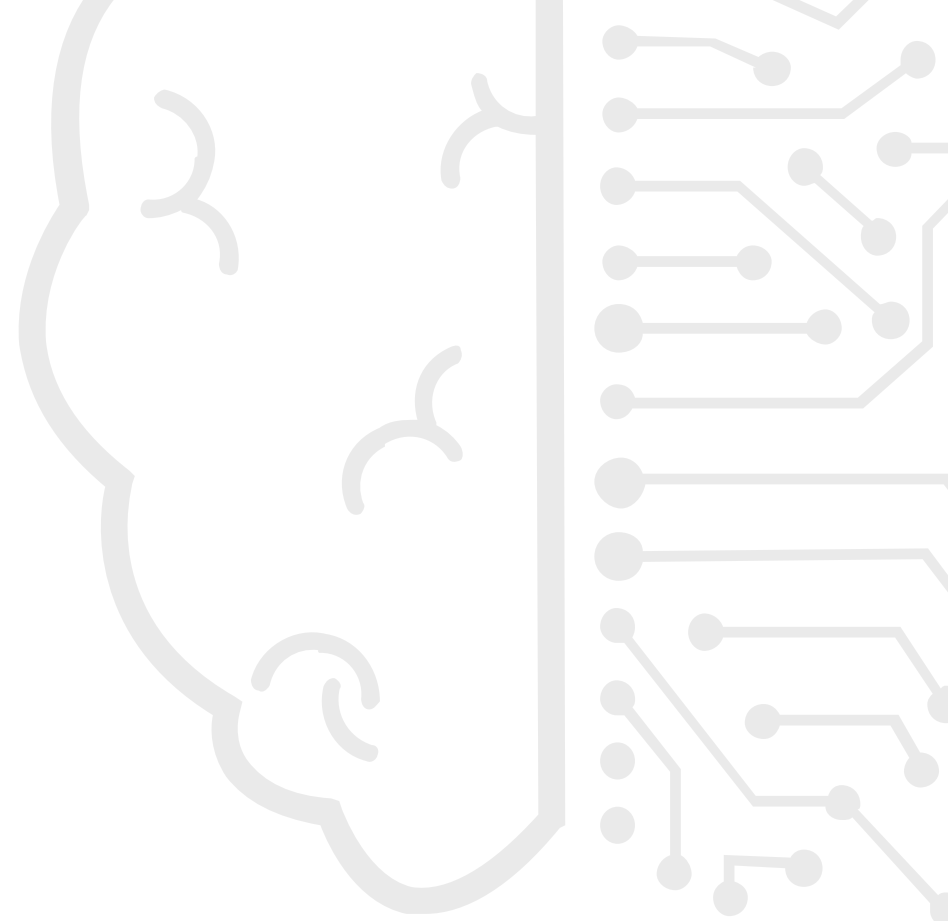
7. Carrier Billing PoC

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8. Lessons Learned

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9. Q & A



# Management Summary



## Abstract

Applying predictive analytics in business: Our journey, customer examples and an outlook on self-service and automation



## Foundation

Traditionally coming from **classical SAP BI business** we increasingly recognized the **potential of predictive analytics** for our clients and started to build up know how and start interesting PoC.



## Results

In the recent years we were able to conduct a couple of interesting **PoC**, learn more about the **integration of SAP and Predictive Analytics** and also convince customers of its value!



# About Swisscom

# About Swisscom

## Digital Enterprise Services – More than Telco



Design

*Client Advisory with focus on Data Warehousing and Reporting, using SAP capabilities.*



Build

*Design and development of data models, data flows, reports, dashboards and predictive models.*



Run

*Operation and maintenance of SAP BI Systems.*



# About Swisscom

## Value Proposition in Predictive Analytics

1



Long experience in business processes

2



Deep knowledge in SAP ERP and its data

3



Strong in business case identification

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Many of us are not data scientists, but we see increasing potential to integrate data mining capabilities with automated business processes and traditional BI





# Our Architecture

# Our Architecture

## SAP Predictive Analytics



### Predictive Analysis Library (PAL)

- KNN classification
- Decision tree
- Association analysis
- Many more

**Focus** → Standardized Algorithms



### Automative Predictive Library (APL)

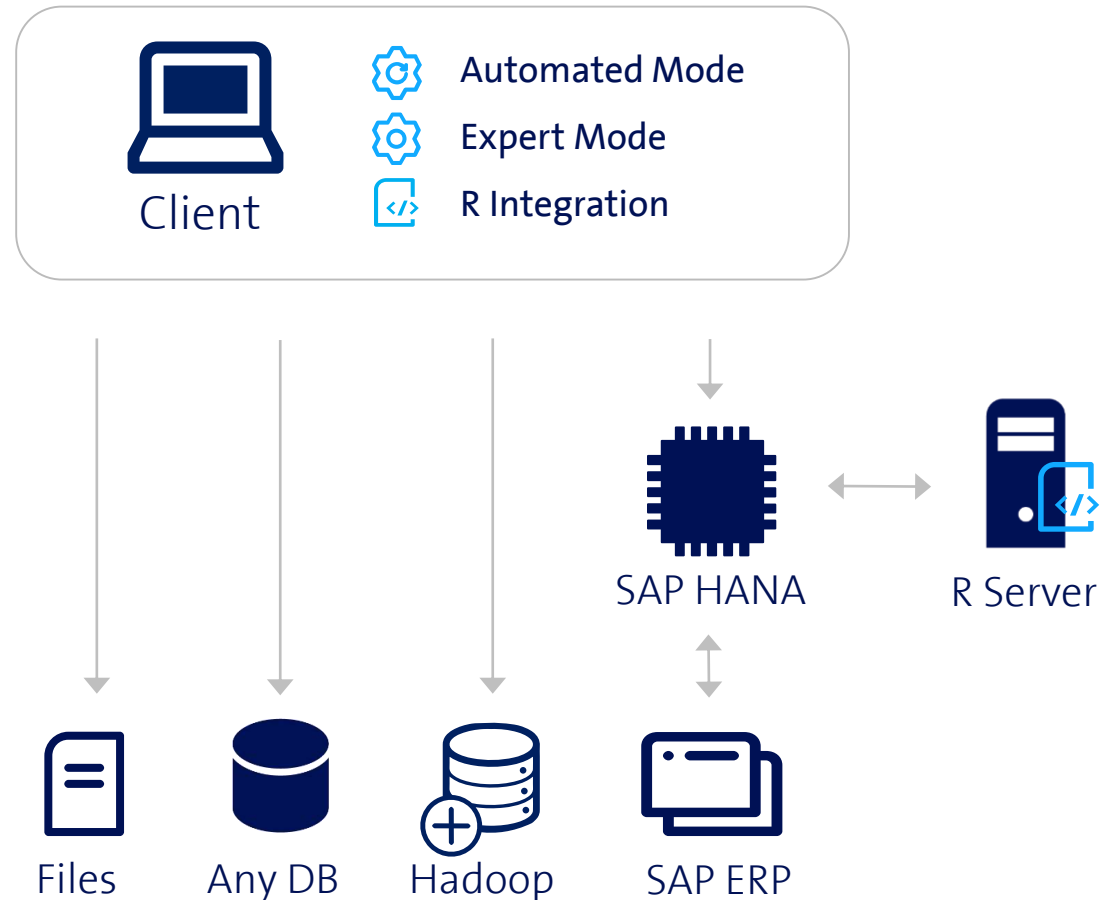
- Classification
- Regression
- Clustering
- Time series
- Influencers

**Focus** → Automated In-Database



### R Script

**Focus** → Individual algorithms





# Our Architecture

## Impressions of SAP Predictive Analytics

The screenshot displays the SAP BusinessObjects Predictive Analytics (Expert Analytics) interface, divided into two main windows.

**Top Window (Vorbereitung):** Shows the data preparation stage. The main area displays a table with the following data:

Id	Verkäufer	Betrag	Datum	Produkt	Währung	Ort
123	ABC	123	14	ABC	ABC	ABC
1	Matthias Mohler		01.01.2017	Staubmaster 3000	CHF	Bern
2	Matthias Mohler		01.05.2017	Cleanfix	EUR	Bern
3	Matthias Mohler		31.03.2017	Staubmaster 3000	CHF	Bern
4	Sandra Müller		28.02.2017	Cleanfix	CHF	Zürich

The left sidebar shows dimensions and measures: **KENNZAHLEN** (2) includes 'Betrag' and 'Id', both with 'Summe' aggregation. **DIMENSIONEN** (7) includes 'Betrag', 'Datum', 'Id', 'Ort', 'Produkt', 'Verkäufer', and 'Währung'.

**Bottom Window (Prognose):** Shows the predictive model workflow in the 'Designer' view. The workflow consists of three steps: 'Sales.xlsx/D...' (data source), 'Linear Regre...' (model), and 'JDBC Writer' (output). The right sidebar lists available components: Favoriten (0), Algorithmen (27), Datenvorbereitung (8), Datensreiber (2), Dateischreiber (CSV Writer, Datenbankschreiber, JDBC Writer), and Modelle (0).

# Our Architecture

## Key Benefits



### Automation

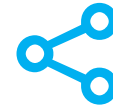
Easy to adopt  
algorithms

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Run data mining on  
recurring basis

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High performance  
In-database calculations



### Integration

SAP process and business  
domain knowledge

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Strong technical  
integration with SAP

---

Use mining insights in the  
operational process

A large, faint teal gear graphic is centered on the page. It has eight teeth and a circular center. The text 'Our Approach' is overlaid on the gear.

# Our Approach

# Our Approach

## Focus on Business Value

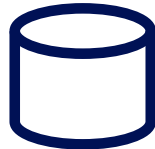
1

Get clarity on business process and scope



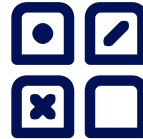
2

Get and understand available data



3

Prepare data and perform analysis



4

Define business case for automation



5

Design and implement automated solution



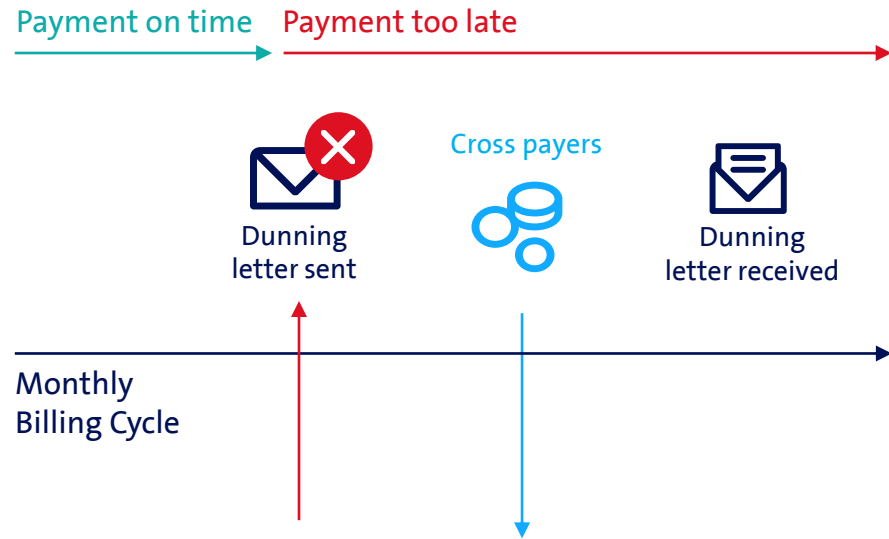
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Creating a solid business case is key in this process

# Dunning Prevention PoC

# Dunning Prevention PoC Business Scenario

## Overview



## Objective

«Can we predict **which customers are likely to pay** the bill right before the dunning letter is received?»



## Result

Over **88%** of predicted cases did indeed pay the bills before receiving the dunning letter.



## Business Case

Savings up to **600k CHF** per year with sending fewer dunning letters.



# Dunning Prevention PoC

## PoC Solution

3 Predict

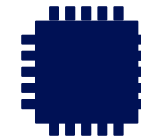


Client



Automated Mode  
Classification Analysis

2 Prepare



SAP HANA



Exposing cleansed data  
on the fly in HANA views

1 Acquire



Files

Invoices, Contracts  
Customer



SAP ERP

RMCA



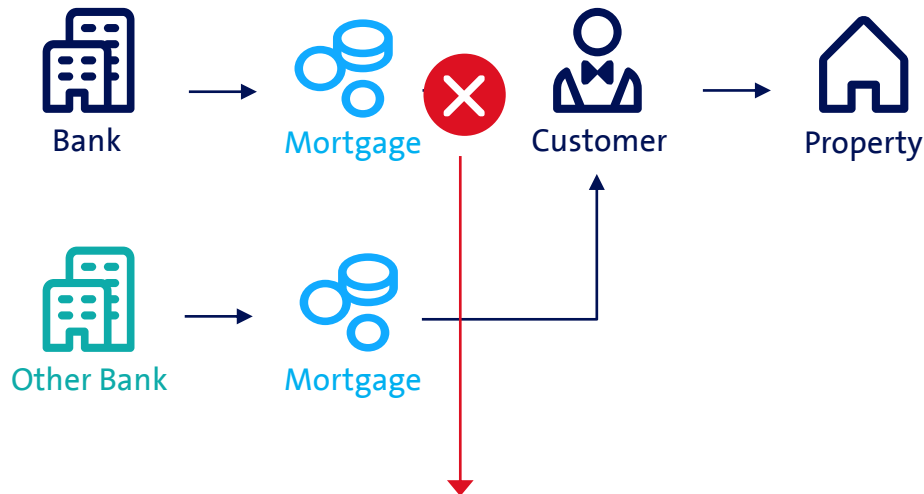
Data acquisition from  
SAP and flat file sources



# Banking PoC

# Banking PoC Business Scenario

## Overview



## Objective

«Can we predict which **clients are likely to churn** and move their mortgage contract to another bank?»



### Result

*Risk Score  
between 0 and 1  
can be used to  
suggest **next  
best activity** to  
client advisor.*



### Business Case

*Cost of **retention  
offer** for customers  
which wont churn  
will be less than  
costs of losing  
all clients to  
competition.*



# Banking PoC Solution

BANK SWISSCOM

3 Predict

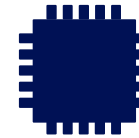


Client



Automated Mode  
Classification/Regression

2 Prepare



SAP HANA



Exposing cleansed data  
on the fly in HANA views

1 Acquire



SAP Data Services



SFTP



Data acquisition from  
Secure FTP server files  
provided with SAS



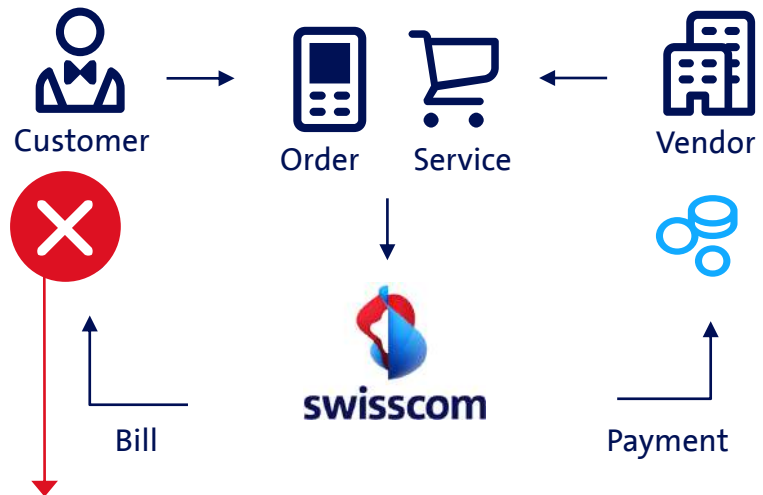
SAS

A large, faint, light teal shopping cart icon is centered in the background of the slide. The cart has a handle at the top, a rectangular basket in the middle, and two circular wheels at the bottom.

# Carrier Billing PoC

# Carrier Billing PoC Business Scenario

## Overview



## Objective

«Can we predict which customers are likely to be unable to pay their future bill?»



## Result

*Driver variables can be used to reduce customer spending limit for the service.*



## Business Case

*Lower cost because fewer customers are unable to pay due to reduced limit. And savings must be bigger than sales potential of those clients which were not accurately scored.*




# Carrier Billing PoC Solution

3 Predict



Client

 To be defined

2 Prepare




Non-SAP DWH

 Exposing cleansed data on the fly in SQL views

1 Acquire



Billing Other

 Data acquisition done by DWH team






# Lessons Learned





# Lessons Learned

## Key Take Aways

-  1 Data preparation is 80% of the work
-  2 Frequent interaction with business is key
-  3 Partial automation is possible

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And we are still excited to start new cases!





# Lessons Learned

## Automation

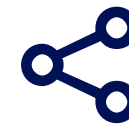
1

Selection of the  
right model useful



2

Generation of many  
specific models useful



3

Monitoring and  
Re-training needed



Q & A



# Contact



Martin  
Gutmann

**Head of Service Line**  
*Analytics & Data*



Matthias  
Mohler

**Head of Team**  
*Analytics Consulting*



Olivier  
Gwynn

**Senior Analytics Consultant**  
*SME Predictive Analytics*

## SAP Predictive Analytics

[www.sap.com/trypredictive](http://www.sap.com/trypredictive)